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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/084,182	02/28/2002	Junji Nakanishi	2185-0623P-SP	4912

2292 7590 05/05/2006

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EXAMINER	
LEE, SIN J	

ART UNIT	PAPER NUMBER
1752	

DATE MAILED: 05/05/2006

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary	Application No.	Applicant(s)	
	10/084,182	NAKANISHI ET AL.	
	Examiner	Art Unit	
	Sin J. Lee	1752	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☒ Responsive to communication(s) filed on *09 February 2006*.

2a)☐ This action is **FINAL**. 2b)☒ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) *1,3-6 and 8-11* is/are pending in the application.

4a) Of the above claim(s) _____ is/are withdrawn from consideration.

5)☐ Claim(s) _____ is/are allowed.

6)☒ Claim(s) *1,3-6 and 8-11* is/are rejected.

7)☐ Claim(s) _____ is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☐ The specification is objected to by the Examiner.

10)☐ The drawing(s) filed on _____ is/are: a)☐ accepted or b)☐ objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11)☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

12)☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

a)☒ All b)☐ Some * c)☐ None of:

1.☒ Certified copies of the priority documents have been received.

2.☐ Certified copies of the priority documents have been received in Application No. _____.

3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

1) ☒ Notice of References Cited (PTO-892)
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3) ☐ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08) Paper No(s)/Mail Date _____.
4) ☐ Interview Summary (PTO-413) Paper No(s)/Mail Date. _____.
5) ☐ Notice of Informal Patent Application (PTO-152)
6) ☐ Other: _____.

DETAILED ACTION

1. Applicants canceled claim 7.

2. In view of the verified English translation of the priority document, previous 103(a) rejection on claims 1 and 3-8 over Oomori et al'704 in view of Padmanaban et al'690 is hereby withdrawn.

3. In view of the amendment of February 9, 2005, previous 103(a) rejection on claims 1, 3-6 and 8 over Barclay et al'086 in view of Padmanaban et al'690 is hereby withdrawn.

4. Due to newly cited prior art, the following rejections are made *non-final.*

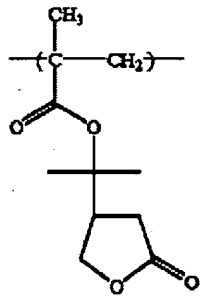
Claim Rejections - 35 USC § 103

5. The text of those sections of Title 35, U.S. Code not included in this action can be found in a prior Office action.

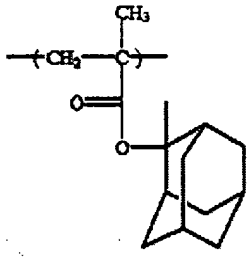
6. Claims 1, 3-6 and 8 are rejected under 35 U.S.C. 103(a) as being unpatentable over Kodama et al (US 6,291,130 B1) in view of Padmanaban et al (5,846,690).

In Example 3, Kodama teaches a positive photosensitive composition containing Resin (P2), triphenylsulfonium triflate and 1,5-diazabicyclo[4,3,0]non-5-ene (a hindered amine) (see Table 1 and Table 4). Kodama's Resin (P2) contains the following repeating units (see col.14, lines 55-65 and col.35, lines 45-55):

(a1)

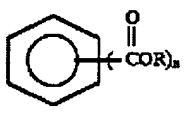


(b1)



Therefore, Kodama teaches present invention of claim 1 except for present component (D). Kodama teaches that the taught photoresist composition may further contain other additives such as plasticizer (see col.84, lines 50-55). Kodama fails to provide specific examples of suitable plasticizer. One of ordinary skill in the art would have been motivated to use any plasticizer which is well-known and conventional in the art of positive type resist materials. Padmanaban (col.5, lines 47-67, col.6, lines 1-2) teaches that adding a plasticizer of the following formula

(II)



wherein R is substituted or unsubstituted alkyl having 1 to 20 carbon atoms, and n is a number of 1 or 2.

to a positive working resist composition enhances a compatibility between components in the resist composition, improves the adhesion thereof to a substrate and increases a

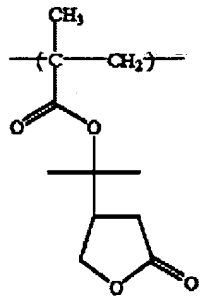
contrast of the pattern formed on the resist composition, whereby the resist composition can exhibit improved resolution and depth of focus. Suitable examples include terephthalic acid-bis-(2-hydroxyethyl)ester and phthalic acid-di-n-octyl ester. It would have been obvious to one skilled in the art to use phthalic acid-di-n-octyl ester as Kodama's plasticizer in order to enhance a compatibility between components in the resist composition, improve the adhesion thereof to a substrate and increase a contrast of the pattern formed on the resist composition, whereby the resist composition can exhibit improved resolution and depth of focus as they are well known in the art. Therefore, Kodama in view of Padmanaban would render obvious present inventions of claims 1, 3, 5, 6 and 8.

With respect to present claim 4, Kodama teaches that his resin can furthermore contain one or more other monomer units in order to improve characteristics of the resin (col.57, lines 1-6), and as one of *preferred* examples of such monomer units, Kodama teaches hydroxystyrene monomer unit (col.58, lines 46-54) which increase the alkali solubility of the resin. Therefore, it would have been obvious to one skilled in the art to further include a hydroxystyrene monomer unit in Kodama's Resin (P2) in order to increase alkali solubility of the resin as taught by Kodama. Therefore, Kodama in view of Padmanaban would render obvious present invention of claim 4.

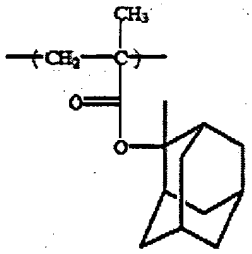
7. Claims 1, 3-6 and 8-11 are rejected under 35 U.S.C. 103(a) as being unpatentable over Kodama et al (US 6,291,130 B1) in view of Kawauchi et al (US 2002/0086233 A1) or Ishikawa et al (4,671,854).

In Example 3, Kodama teaches a positive photosensitive composition containing Resin (P2), triphenylsulfonium triflate and 1,5-diazabicyclo[4,3,0]non-5-ene (a hindered amine) (see Table 1 and Table 4). Kodama's Resin (P2) contains the following repeating units (see col.14, lines 55-65 and col.35, lines 45-55):

(a1)



(b1)



Therefore, Kodama teaches present invention of claim 1 except for present component (D). Kodama teaches that the taught photoresist composition may further contain other additives such as plasticizer (see col.84, lines 50-55). Kodama fails to provide specific examples of suitable plasticizer. One of ordinary skill in the art would have been motivated to use any plasticizer which is well-known and conventional in the art of photoresist materials. Dioctyl phthalate (another name for *di-2-ethylhexyl phthalate*) or dioctyl adipate (another name for *di-n-octyl adipate*) are well known in the art as plasticizers used in a photosensitive resin composition for improving flexibility of the

coated film as evidenced by Kawauchi et al, [0232] or Ishikawa et al, col.4, lines 46-62. It would have been obvious to one skilled in the art to use dioctyl phthalate or dioctyl adipate as Kodama's plasticizer in his photosensitive composition in order to improve flexibility of the coated film. Therefore, Kodama in view of Kawauchi et al or Ishikawa et al would render obvious present inventions of claims 1, 3, 5, 6 and 8-11.

With respect to present claim 4, Kodama teaches that his resin can furthermore contain one or more other monomer units in order to improve characteristics of the resin (col.57, lines 1-6), and as one of *preferred* examples of such monomer units, Kodama teaches hydroxystyrene monomer unit (col.58, lines 46-54) which increase the alkali solubility of the resin. Therefore, it would have been obvious to one skilled in the art to further include a hydroxystyrene monomer unit in Kodama's Resin (P2) in order to increase alkali solubility of the resin as taught by Kodama. Therefore, Kodama in view of Kawauchi et al or Ishikawa et al would render obvious present invention of claim 4.

8. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Sin J. Lee whose telephone number is 571-272-1333. The examiner can normally be reached on Monday-Friday from 9:00 am EST to 5:30 pm EST.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Cynthia Kelly, can be reached on 571-272-1526. The fax phone number for the organization where this application or proceeding is assigned is **571-273-8300**.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for

published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see http://pair-direct.uspto.gov. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

S. Lee
April 29, 2006

SIN LEE
PRIMARY EXAMINER